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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,725	12/08/2003	David Bengtson	18126	3947

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TYCO TECHNOLOGY RESOURCES  
4550 NEW LINDEN HILL ROAD, SUITE 140  
WILMINGTON, DE 19808-2952

EXAMINER
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VO, NGUYEN THANH

ART UNIT	PAPER NUMBER
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2618

MAIL DATE	DELIVERY MODE
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05/16/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/730,725

Applicant(s)

BENGTON ET AL.

Examiner

Nguyen Vo

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 17 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-23 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 8-13, 15, 16 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 4 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Double Patenting***

1. Claims 22 and 23 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 4 and 14, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 18-19 are rejected under 35 U.S.C. 102(a) as being anticipated by Mruz (US 2003/0001668 A1, cited by examiner).

As to claim 18, Mruz discloses a circuit for determining a reference impedance (see paragraphs [0021], [0027], [0030]) for an input to a plurality of segments (see the amplifiers 16A-16D) for one or more operational states of said plurality of segments (see the control logic; see also paragraphs [0020], [0021], [0031]), and for adaptively adjusting impedance of said input toward said reference impedance (see paragraphs [0021], [0027], [0030]).

As to claim 19, see the logic circuit 66 in figure 6 and at paragraph [0028].

### ***Claim Rejections - 35 USC § 103***

Art Unit: 2618

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mruz.

As to claims 20-21, Mruz does disclose an impedance adjusting circuit as claimed (see paragraph [0025], [0028]), but fails to disclose the impedance adjusting circuit being a phase shifter and a variable resistor as in claims 2, 9; a phase shifter as in claims 12, 20; and a digital resistor as in claims 13, 21. The examiner, however, takes Official Notice that such impedance adjusting circuits are known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of conventional impedance adjusting circuits to

Mruz, in order to have a simpler and less expensive way of implementing the impedance matching circuit in Mruz.

7. Claims 1-3, 5-6, 8-13, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mruz in view of Alberth (US 6,349,216 B1, cited by examiner).

As to claim 1, Mruz discloses a method for the processing of an electromagnetic input signal, wherein said signal is passed through an input to be modified across a plurality of modifying segments (see the amplifiers 16A-16D) in figure 8 using a characteristic of said signal to generate an output signal (see the output of the combiner 32'), wherein said plurality of segments have a plurality of states controlled by a control signal (see the control logic; see also paragraphs [0020], [0021], [0031]), said method comprising the steps of determining a reference impedance for said input for one or more states of said plurality of segments (see paragraphs [0021], [0027], [0030]); and adaptively adjusting impedance of said input toward said reference impedance (see paragraphs [0021], [0027], [0030]). Mruz fails to disclose that the control signal is generated from a characteristic of the input signal as claimed. Alberth discloses a control signal for adjusting impedance 120 (see figure 4), wherein the control signal is generated from a characteristic of the input signal (see paragraph 12 lines 56-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Alberth to Mruz, in order to significantly increase efficiency of the amplifier (as suggested by Alberth at column 1 lines 24-26; column 3 lines 18-19).

As to claims 2, 9, 12-13, Mruz does disclose an impedance adjusting circuit as claimed (see paragraph [0025], [0028]), but fails to disclose the impedance adjusting circuit being a phase shifter and a variable resistor as in claims 2, 9; a phase shifter as in claims 12, 20; and a digital resistor as in claims 13, 21. The examiner, however, takes Official Notice that such impedance adjusting circuits are known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of conventional impedance adjusting circuits to Mruz, in order to have a simpler and less expensive way of implementing the impedance matching circuit in Mruz.

As to claim 3, see Mruz, paragraphs [0021], [0027], [0030].

As to claims 5, 15, see Mruz, paragraphs [0020], [0021], [0027], [0030].

As to claims 6, 16, Mruz does disclose a combiner 32' as claimed, but fails to disclose that the combiner 32' is one of power transformers, quarter-wave transmission lines, discrete LC components and a Pi-networks as recited in the claim. The examiner, however, takes Official Notice that such combiners are known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of conventional combiners to Mruz, in order to have a simpler and less expensive way of implementing the combiner 32'.

As to independent claims 8, 10, they are rejected for similar reasons as set forth in claim 1.

As to claim 11, see Mruz, logic circuit 66 in figure 6 and at paragraph [0028].

***Allowable Subject Matter***

8. Claims 4, 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 4 and 14, the prior art of record fail to disclose or render obvious that the input signal is a carrier wave modulated by the phase portion of an information signal, and said control signal is comprised from the magnitude portion of said input signal, as specified in the claims.

9. Claims 22-23 are allowed.

#### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-6, 8-16, 18-23 have been considered but are moot in view of the new ground(s) of rejection.

Regarding amended independent claims 1, 8, 10, applicant's attention is directed to the rejection to claims as set forth above for the reasons as to why the newly-added limitations do not render the claims patentable over applied references.

Regarding independent claim 18 and dependent claims 19-21, the rejection is maintained as set forth above because applicant fails to address the examiner's rejection.

#### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Vo whose telephone number is (571) 272-7901. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nguyen Vo  
Primary Examiner  
Art Unit 2618

*Nguyen Vo*  
5-12-2007